

ABSTRACT OF THE DISCLOSURE

An optical system for a projection display includes a light source, a light path switching device, and a total internal reflection (TIR) prism set disposed between the
5 light path switching device and the projection lens. The light path switching device has a first mode of operation for directing the light towards a projection lens and a second mode of operation for directing the light away from the projection lens. The TIR prism set includes a first prism, a second prism and a third prism; a first gap is formed between the first prism and the second prism, and a second gap is formed between the
10 first prism and the third prism. The light emitted from the light source enters the light path switching device by means of total internal reflection. Then, under the first mode, the light reflected by the light path switching device passes through the first and the second gaps and enters the projection lens, whereas under the second mode, the light reflected by the light path switching device is totally reflected at the boundary between
15 the first gap and the second prism and away from the projection lens.